AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) An apparatus for generating a nanoscale oscillating electric field, comprising:

a resonant medium having at least one surface plasmon mode therein;

an active medium, having a transition frequency and comprising at least one object having a significant ~~dipole oscillator~~ transition strength; and

an energy source;

wherein the application of energy from the energy source to the active medium results in the energy transition of the at least one object, thereby stimulating the emission of the at least one surface plasmon in the resonant medium, and

wherein the energy source is adapted to provide a power sufficient to induce population inversion and stimulated emission, thereby causing ~~the stimulated emission causes~~ the buildup of a macroscopic number of surface plasmons in the at least one surface plasmon mode.

2. (Original) The apparatus of Claim 1, wherein the resonant medium is affixed to a substrate.

3. (Withdrawn) The apparatus of Claim 1, wherein the resonant medium is a nanowedge.

4. (Original) The apparatus of Claim 1, wherein the resonant medium is a metal nanoparticle.

5. (Withdrawn) The apparatus of Claim 1, wherein the resonant medium is a composite nanoparticle.

6. (Withdrawn) The apparatus of Claim 5, wherein the composite nanoparticle comprises a metal.

7. (Withdrawn) The apparatus of Claim 5, wherein the composite nanoparticle comprises a semiconductor.

8. (Withdrawn) The apparatus of Claim 5, wherein the composite nanoparticle comprises a dielectric.

9. (Original) The apparatus of Claim 1, wherein the resonant medium has surface plasmon modes in the visible region of the electromagnetic frequency spectrum.

10. (Withdrawn) The apparatus of Claim 1, wherein the resonant medium has a plurality of surface plasmon modes in an ultraviolet region of the electromagnetic frequency spectrum.

11. (Withdrawn) The apparatus of Claim 1, wherein the resonant medium has surface plasmon modes in the infrared region of the electromagnetic frequency spectrum.

12. (Original) The apparatus of Claim 1, wherein the resonant medium is approximately 30 nanometers long.

13. (Original) The apparatus of Claim 1, wherein the resonant medium is approximately 20 nanometers wide.

14. (Withdrawn) The apparatus of Claim 1, wherein the object of the active medium is a rare-earth ion.

15. (Withdrawn) The apparatus of Claim 1, wherein the object of the active medium is a dye molecule.

16. (Original) The apparatus of Claim 1, wherein the object of the active medium is a semiconductor quantum dot.

17. (Withdrawn) The apparatus of Claim 16 wherein the quantum dot is a doped semiconductor.

18. (Previously presented) The apparatus of Claim 16 wherein the quantum dot is a nanocrystal covered with a layer of organic molecules.

19. (Previously presented) The apparatus of Claim 1, wherein the transition frequency of the active medium is substantially within the electromagnetic frequency range of visible light.

20. (Withdrawn) The apparatus of Claim 1, wherein the transition frequency of the active medium is substantially within the electromagnetic frequency range of ultraviolet light.

21. (Withdrawn) The apparatus of Claim 1, wherein the transition frequency of the active medium is substantially within the electromagnetic frequency range of infrared light.

22. (Original) The apparatus of Claim 1, wherein the energy source is an optical energy source.

23. (Withdrawn) The apparatus of Claim 1, wherein the energy source is an electrical energy source.

24. (Withdrawn—currently amended) The apparatus of Claim 20, wherein the electrical energy source is coupled to the active medium by nanoleads or a nanolead[[s]].

25. (Withdrawn) The apparatus of Claim 1, wherein the energy source is a chemical energy source.

26. (Withdrawn) The apparatus of Claim 1, wherein the energy source is a nuclear energy source.

27. (Withdrawn) A method for fabricating a SPASER device, the method comprising the steps of:

affixing a resonant medium to a substrate; and

affixing an active medium to the resonant medium;

wherein the application of an energy source to the active medium results in the transition of the at least one object, thereby stimulating the emission of the at least one surface plasmon in the resonant medium.

28. (Withdrawn) A method for generating surface plasmon emission, the method comprising the steps of:

applying energy to an active medium, causing a transition of at least one object within the active medium;

transferring energy from the active medium to at least one surface plasmon on a resonant medium; and

stimulating the emission of surface plasmons in the resonant medium.

29. (New) The apparatus of Claim 1, wherein the resonant medium comprises silver.

30. (New) The apparatus of Claim 1, wherein the resonant medium is a V-shaped metallic nano-inclusion.

31. (New) The apparatus of Claim 16, wherein the semiconductor quantum dot is one of a PbS quantum dot and a PbSe quantum dot.

32. (New) The apparatus of Claim 16, wherein the semiconductor quantum dot is a chemically synthesized quantum dot.

33. (New) The apparatus of Claim 16, wherein the semiconductor quantum dot has a radius smaller than approximately 2.3 nm.

34. (New) The apparatus of Claim 33, wherein the semiconductor quantum dot has a radius smaller than approximately 2.0 nm.

35. (New) The apparatus of Claim 1, wherein the active medium is a few monolayers thick.